

University News

MONDAY, OCTOBER 10, 1994

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MUSTUFA KHAN

Towards a More Objective Teaching — Language and Literature in Human Resource Development

M.V. LOKESH RAJU

Crapshooting with Adult Education Organisations

R. GUPTA

Pre-Testing

— Improving the Quality of the Higher Education TV Programmes

J. ANANDA MITHA & K. C. RAJEEV

Formative and Summative Evaluation

K.V. RAJENDRA BABU

Economic Security Council — Convocation Address

WORKSHOP ON COURSE MATERIAL IN DISTANCE EDUCATION

AUDIO-VISION : NEW METHOD IN EDUCATION • PROMOTING RESEARCH IN TECHNICAL EDUCATION



Association of Indian Universities

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IN THIS ISSUE

Towards a More Objective Teaching	1
Crapshooting with Adult Education Organisation	4
Pre-Testing	7
Formative and Summative Evaluation	11
Convocation	
Dr. B.R. Ambedkar Open University, Hyderabad	14
Campus News	
Workshop on Course Material in Distance Education	22
Promoting Research in Technical Education	24
Audio-Vision : New Method in Education	24
Agriculture	
Green Gram Pod Stripper	26
News from UGC	
Countrywide Classroom Programme	27
Book Review	29
Research in Progress	32
Theses of the Month	33
Education News Index	34

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Editor :
SUTINDER SINGH

Towards a More Objective Teaching Language and Literature in Human Resource Development

Mustafa Khan*

Teaching in colleges and universities is manifestly a subjective affair, especially in the class of language and literature, as of today. Whereas in essence it is a different activity, teaching is essentially a thing to do in class, a matter of business in the hands of the teacher, a mutual task undertaken by the teacher for the students, an activity concerning the exercise of the mind and body. It is not and should not be made a private concern, a mere expression of thought and feeling of the dominating speaker in the class. Despite the cogency of these axiomatic beliefs in most of the teachers, there is, nevertheless, an abject venality that makes teaching a private concern. In the absence of some well recognized techniques, methods and approaches of teaching language and literature, of widest acceptance, it comes as no surprise that there are complaints galore about higher education. A constant recourse to some well recognized and widely accepted techniques, methods and approaches would certainly wean the teachers from their private concern that teaching often becomes in the class. In the absence of inspection of the teaching process and the evaluation of the performance of the teachers the focus of teaching is, unavoidably in the most cases, perturbed. The teacher is in a total subjectivity of a make believe world of his own making. In the absence of a constant recourse to some well known and widely accepted techniques, methods and approaches the teacher is disillusioned whenever he comes across a better way of teaching as he is nurtured on his subjectivity and his class is used to his way of teaching. Therefore there is a need for easily available proven techniques, methods and approaches.

A ubiquitous circumstance plaguing teachers is the varying levels of language competence in students. A tacit acceptance of the rhapsodic outpourings of a teacher is silently borne, albeit with cruelty, by his passive listeners. The few articulate students are overwhelmed by the silent majority. The more the teacher speaks the greater is the taciturn frigidity. A ferment of mind here and there is always brushed under the carpet either by the time limit or for the tolerance-limit of the others in the class. If the students have working knowledge of language and engage their teachers in explaining or arguing, there would be perhaps less subjectivity. The mind of the teacher is a Whorfian frame of perception. He dilates on what he has perceived in his own individual manner. Though not throwing all cautions to the winds, he finds that what he speaks is self-sustaining and necessarily to him self-justificatory. Another weird allegiance to subjectivity is the insouciance in not preparing for teaching. A teaching unit requires careful

*Neyee Colony, Ambedkar Chowk, Manmad-423 104.

planning before-hand and deft execution afterwards. If not a carbon copy of the teaching plan, the execution must reflect the planning point by point, step by step. An afterthought must supplement the execution of the teaching unit, but it should not be an escape into a subjective expansion leading the teacher to glorify in his new found wealth of matter. 'An afterthought is a matter of relevance and not self indulgence. Even a cursory glance to the execution in relation to the planning will develop the habit of not allowing oneself to waywardness in teaching. The haphazard approach to teaching will take leave under pressure from the care to be more systematic according to some recognized and recognizable ways of teaching. What are those ways? Hereunder is an attempt at one such way of teaching.

Episodic Teaching

A means of potential teaching having greater possibility of innovation is episodic teaching. In every work of literature one can easily divine an incident or experience that stands out from others. Even a lyric like William Stafford's "Travelling through the Dark" is subject to this. One can evolve an incident or experience into a teaching unit of an hour, the usual time given in the class. The episode is a verbal freeze of the artistic vision. An average class of English language and literature at postgraduate level calls for a concerted effort in teaching the four skills—reading, understanding, writing and speaking. An attempt is purportedly made to teach texts, intensively and extensively. But this is shortcircuited by the teacher's preoccupation with what he wishes to tell, often disregarding concern for teaching methods and approaches of teaching. Instead of holding forth what the teacher knows of a book or a writer, he can look for some major incidents of thematic relevance and linguistic virtuosity. Delving into these two aspects would help meet the needs of existing infrastructure of our established institutes of higher learning. It would be a right step in teaching language and literature as human resource development.

I would like to show the working of this method. Most of us have some well known books to teach. Let us take Ernest Hemingway's "The Old Man and the Sea" for teaching in a senior class. After introducing the writer briefly we pass on to his work under study. A brief and simple summary can ac-

quaint the students with the text. A mention of the major events follows: Santiago and Manolin's supper and breakfast, the hooking of the marlin, the Mako-shark fight. Of these the old man's encounter with the Mako is the leitmotif of the whole book. Comprising 875 words it starts with 'The shark was not an accident' and ends with 'A man can be destroyed but not defeated.' Either the teacher reads the whole episode or asks someone to do it. Pausing at the last sentence how it is a concluding statement, a coda. By now the students would know the significant link between the coda and the episode. A lucid explanation of the ordeal of three days undertaken by Santiago would help link the coda with the entire book. A good job done with little subjectivity.

The overall purpose is to develop the skills of listening with understanding, reading, speaking and writing. This is the approach to teaching the text. One can improvise and innovate as one goes along, but within the broad framework of the text and within the parameters of language and literature. What is not relevant to the text even by the remotest stretch of one's imagination, like one's own private life or what is not language and literature like politics and economy, is not anyone's concern in the class.

The text provides all the terms of reference except terms like coda, leitmotif. But even these are within the easy grasp of the students and are centrally related to the text itself. Goading and guiding the flow of the explanation and teaching the text exerts a powerful influence shaping the perception and response. That is in itself a linguistic ongoing process restrengthening learning. Thus teaching is dictated by the virtuosity of the text rather than the ferment of the teacher's fancy or whim.

Spurious Medicine

The incidence of dictation in the class is very high. It is a short cut to finishing the task of teaching. In its range of occurrence or influence dictation is a spurious medicine with long term after-effects. It gives immediate relief without curing the ailment. Dictation works in the class and nowhere else. Such a blight strikes everything dead. It is a curse to all the four skills, making a travesty of literature and a mockery of language. Neither can the teacher have any satisfaction of developing his own skills to any recognizable mark of distinction nor can the stu-

students emulate any model of any worth. At the teacher's dictation the students almost shut off all their learning faculties. To rectify we must get our acts together.

It is a common knowledge that at least one period of tutorial is assigned for a paper every week. This is maintained on the paper and rarely translated into practice. One can coordinate the regular teaching period and a tutorial class for the sake of exemplification. Exemplification is an extension of episodic teaching, a complementary part. Exemplification is the act or process of showing by example or the state of being an example. The target episode in the text is such an example. The teacher can help the class make examples of their own. There are other prescribed texts where one can find examples of a coda. If the coda in Hemingway's story is fully understood; the students would not have to search for to improvise with the help of other texts, newspapers or magazines. A textbook for General English like "Avenues to English Prose (ed. Jagdisan, OUP, 1987) has a story of A.J. Cronin called "Two Gentlemen of Verona". At the end there is a coda not dissimilar to the one in Hemingway: 'War, with its attendant horrors, had not broken their spirit.' The teacher can exemplify the meaning of coda with this story. Our newspapers have examples in plenty of acts of bravery and adventure. Even the award the

President of India gives away on the Republic Day can give an indigenous example.

In putting forth this methodology of teaching, I feel certain that I am not breaking new grounds. Rather than innovating I am attempting a renovating of what is already there, in the text and the teacher of it. We have what we need, what we really need is to think closely and improvise, by which I mean to make do with what we already have. After having invested so much into the educational establishment, making a new beginning would be a rather unenviable job. Let us make do with the existing human resource at our disposal. In Hemingway's story Santiago improvised the sail with flour sack and waged a heroic fight using gaff, oars, tiller as harpoons, knife and club. In Cronin's story Jacopo and Nicola made do with shining boots, selling fruits, hawking newspapers, conducting tourists around the town, running errands, exploiting every opportunity that the war ravaged town had still left for them. All this to save their sister from tuberculosis. In their own teaching career the teachers can take these examples for themselves as well as for the taught.

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O.P. Gupta

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The main focus of the book is on the role of the University Grants Commission in building up and modernising the university libraries *inter alia* detailing the quality improvement programmes, particularly of the library personnel, initiated in the light of the recommendations made by various committees constituted by the University Grants Commission.

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Crapshooting with Adult Education Organisations

M.V. Lakshmi Reddy*

The desirability and relevance of adult education to national development is recognised and well documented not only in India but also the world over. Here, the term "adult education" is used in its broadest sense to include in it a variety of programmes and institutions of adult education. While adult education has received universal recognition today, even a word on its importance is certainly an overemphasis. In this context, the need to support and strengthen adult education in India, a country with a large chunk of its population (i.e. 328.88 million) being illiterate, needs no special mention.

The quality of adult education depends much on its management and administration which in turn depends on the kind of technical and resource support it has. In other words, the quality of adult education is mainly determined by the nature and type of resource structures established at different levels to provide technical and resource support to the different administrative bodies at different levels of programme implementation.

The creation, continuation, conversion, cessation or closure of any educational institute or organisation depends on many factors such as socio-economic and political development and educational policy on one hand, and the contribution of administrative staff and the faculty of these institutions or organisations on the other, either to the growth or to the destruction of these organisations. Sometimes the fraud in the implementation of the well formulated policy will also determine the fate of these institutions along with the programmes. This is more so in the case of adult education programmes, institutions, organisations and the resource structures and is much more so in the case of national resource centres in adult education.

Even a cursory observation of the programmes and the resource structures or institutions of adult education would provide an understanding of the metamorphosis of the resource structures in India and the factors that caused it. But, undoubtedly, the opinions of the new entrants to the field and the ones who have already been in the field might differ. For the new entrant to the field the whole of the programme and the resource structure may appear to be new, innovative and excellant while for those who have been in the field it would appear to be the same old wine changing the new, modern and attractive bottles over and again over the time. This paper is intended to throw some light on the changes in adult education programmes and the nature and the type of resource structures that were established for implementation of the policy or programmes.

The origin of resource structure in adult education can be traced to pre-independene period when Indian Adult Education Association was established in 1939 when the Congress Party was in power in most of the provinces. This is the first voluntary organisation of its kind which was established to provide a national forum for the functionaries of adult education in the country, besides discharging the duties of a resource centre in adult education then.

During the First Five Year Plan (1951-56) Social Education Programme was launched and the resource centres established were the Social Education Officers' Training Centres. The main functions of these Centres were to provide training to the social education workers at different levels. However, these Centres were not established uniformly throughout the country and they were also very few in number. There were no resource centres established at national and intermediary level.

National Fundamental Education Centre (NFEC) was established in 1956, during the Second Five Year Plan (1956-61), to discharge the functions

*Assistant Director, Regional Services Division, Indira Gandhi National Open University, Maidan Garhi, New Delhi - 110 068.

of training, orientation, evaluation and research, material production, clearing house activities, etc. in the field of social education. This was the first ever national resource centre of its kind established at national level in the post-independence period. This was, however, subsequently converted into a Department of Education in National Council of Educational Research and Training which also discharged similar functions as that of NFEC.

During the Third Five Year Plan (1961-66), besides continuing the old programmes, a few new programmes/schemes such as Janata Colleges, Community Centres, Farmers' Clubs, Mahila Samitis were launched. But there was no significant change in the social education resource structures at the national or state level. Due to Chinese aggression during this Plan the Government of India could not layout the sketch of the Fourth Five Year Plan, and hence annual plans were launched. Significant among the programmes launched was the Farmers' Functional Literacy Programme with 3 Fs — farmers' training, functional literacy and farm reading as the essential components.

During the Fourth Five Year Plan (1969-74) the Department of Education in NCERT was taken over by the Ministry of Education and Culture and renamed as Directorate of Adult Education (DAE) in 1971. Its main functions were to provide technical and professional support to the programmes in the field in the form of materials, media and methods, training, orientation, monitoring and evaluation, etc. These functions are, again, more or less the same as those of NFEC or Department of Education in NCERT. Until this time it was the Congress Party that had been in power at the Centre since independence. The programmes were launched and continued under the name "social education".

It was during the Fifth Five Year Plan (1974-79) the term adult literacy replaced the terms "social education" or "adult education" in the literature of adult education. Of course, it is a mark of regression as adult education was conceived in its narrow sense. Moreover, due to the fall of Congress Government the Fifth Plan could not be completed. The Janata Government which came to power at the Centre in 1977 came out with annual plans. After reviewing the adult education programmes in the past, it launched National Adult Education Programme in 1979 by bringing all the programmes

under its purview. It was the first national programme launched in the field of adult education. This was the time when some serious thought was given to the planning of the programme including its resource structures at different levels. The DAE was strengthened at national level. Full-fledged Directorates were set up in some States while the State Adult Education Officer was made a part of the Directorate of Education (the Directorate of Social Welfare in Madhya Pradesh). State Resource Centres (SRCs) were established in many states. The establishment of District Resource Units (DRUs), though planned, could not materialise because of many reasons like the change of the Government at the Centre and consequent review of NAEP, revision of adult education programme during the Sixth Plan and so on. During the Sixth Five Year Plan (1980-85) adult education was made a part of Minimum Needs Programme. Establishment of District Resource Units started during this period with simultaneous expansion of SRCs at State level.

National Literacy Mission was launched in 1988, during the Seventh Five Year Plan (1985-90), with a policy decision to convert the existing DAE into National Institute of Adult Education (NIAE) and make it a national resource centre in the field of adult education. But NIAE was established in 1991 as a separate autonomous organisation keeping DAE intact. If one takes an objective view of the facts presented above, would it appear prudent to create one organisation much against the very policy decision itself, only with an intention to wind up the already existing organisation i.e. DAE?

Further, the functions stipulated in the NIAE Memorandum of Rules and Association encompass the areas of training, curriculum and material development, media support, evaluation and research, repository of literature, documentation centre, clearing house, etc. related to adult education. What are the new functions of NIAE for which its creation had been conceived? Are its functions different from those of DAE or its precursor NFEC? Is it (the change from NFEC to Department of Education in NCERT, to DAE to NIAE) not a wastage of resources — human, financial, physical, material, etc? Is it essential that the name of a resource centre should change with change in the programme or the Government or entry or likely exit of bureaucrats at the helm of affairs of policy implementation? Even if it is so, is it necessary that the nature and place of

these centres should be changed along with the entire staff? Would it not affect the efficiency of the resource centres or organisations? Can't the functions of these centres or organisations be enlarged, changed or innovated by retaining their identity and creating new positions in the same for the new functions, in case there is such drastic need which the existing staff cannot fulfil? Is it not possible to strengthen DAE by making a provision for a separate cell in it to look after the activities of research in the field for which NIAE had been conceived mainly?

Both, DAE and NIAE are, now, being continued without any functional demarcation between these two organisations. Since the policy decision was to convert the existing DAE into NIAE and NIAE had been established against the policy decision by retaining DAE, it led to litigation. Why two analogous organisations have been brought into existence? This has posed a mutual threat to the very existence of the two. As a sequel to it, the job security and professional growth of the staff of both the organisations is

at stake.

A glance at the brief description of the metamorphosis of adult education programmes and the resource structures would show that there were many changes in the nomenclature of the programmes and the resource structures. But the changes in national resource centres have been brought about, certainly, without any significant change in the basic functions thereby wasting a lot of resources and putting the job security and the professional growth of staff to continual stake. These changes occurred particularly when there was a change either in the programme or the education policy or the Government at the national level or the bureaucrats at the helm of affairs of the programme or policy implementation. It appears that all this has been a flagrant deception or lip service to illiterate adults, an eye-wash to eminent academics and adult educationists, a death blow to the competent professionals and a luxury to the high profile bureaucrats. Can there be an end to this sort of developments in future? One can only hope!



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PRE-TESTING

Improving the Quality of the Higher Education TV Programmes

Rajendra Mishra*

Introduction

Pre-testing is defined as a type of evaluatory research that is carried out in the formative stages of a programme production. The term denotes the process of systematically collecting the reactions of the audience, similar in characteristics as the target groups, to assess their evaluation of the message sought to be conveyed through the programme; thus helps to explore the ways and means to improve the quality of the programme in all its aspects before its production in the final form. This exercise also helps to determine as to which of the alternative strategies or formats of presenting the programme is more effective in conveying the message, besides identifying its strengths and weaknesses.

What Does Pre-Testing Measure?

Pre-testing helps in assessing the effectiveness of the programme in the following areas :

<i>Attention :</i>	Whether the programme has succeeded in holding the attention of the audience ?
<i>Comprehension :</i>	Whether the message is clearly understood ?
<i>Personal Relevance:</i>	Whether the target audience perceive the message to be personally relevant to them?
<i>Credibility :</i>	Whether the message and its source carries credence ?
<i>Acceptability :</i>	Whether the message is offensive or unacceptable to the audience ?

In addition, Pre-testing also helps to find out the perceived value of the programme among the target audience in terms of the message and its utility. Pre-testing can be carried out for the programmes in

totality or in individual elements, such as the quality of background music or the art work on the cover of a publication etc.¹

Pre-testing is an exercise that helps in identifying unintentional shortcomings and mistakes that may creep so that these can be avoided in the finished product, thereby improving its quality.²

Pre-testing aims at assisting in checking the quality and effectiveness of the programme. This has been found very useful in the initial stages of the production of educational programmes and those meant for the services. It helps in checking errors in communication strategies at an early stage and this improves the effectiveness of programmes. As has been rightly remarked by Adkins, "the term (formative research) refers to a broad range of systematic investigations calculated to produce guidelines leading to the programme from content and manner of presentation that will most effectively accomplish the defined purposes of a programme. Materials can be tailored for the actual users instead of being modelled after programmes produced elsewhere in the world for people with different backgrounds, needs preferences. Assumptions and guess work are replaced by interpreted data and empirical evidence". He has also suggested pilot testing of series programmes. It can be done with one or two parts of the series programmes.³

Limitations of Pre-Testing

Pre-testing can provide programme planners with objective information and direction for improving concepts, messages and materials. However, pre-testing is very qualitative and it is important to recognise its limitations. It is a tool which only suggests the directions from where sound decisions may be made—Pre-testing is indicative not predictive.⁴

II

It is well established now that television with its

*Research Scientist, University Grants Commission
INSAT TV Cell, New Delhi.

vast potential of coverage can be used as a very viable tool to impart education to remote and backward areas of the country where dearth of good faculty and library is always a problem. Keeping this in mind, the University Grants Commission started in 1984 a programme for tertiary level education through television network coverage entitled, "Countrywide Classroom". In the beginning, the primary target audience of the programme was undergraduate students, subsequently, 11 & 12th classes were also included. Secondary target audience of the programme was supposed to be common viewers and academics. To bring the programmes within easy reach of the target group, the University Grants Commission provided over 2000 colleges, located in different parts of the country, with TV sets.

The programmes shown in the Countrywide Classroom cover all the main disciplines — Arts, Pure Science, Biological Sciences and Social Sciences including Humanities.

The credo of the telecast is "the broadcast will aim to upgrade, update and enrich the quality of education, while extending its reach. They will attempt to overcome the obsolescence of the syllabus and present the latest advances in all fields. The programme will seek to arouse the interest of the viewers, whet their appetite and to broaden their horizons. The aim is to stimulate, not to satiate.

The programmes will not be based on or restricted to any syllabi. Instead, they will seek to provide new insights; interrelatedness of various disciplines and developmental problems, will be highlighted, so that sum is greater than the whole of the parts".⁵

To ensure that the Countrywide Classroom gets a steady supply of programmes adhering to its credo, the University Grants Commission has established Media Centres in 14 universities located in different states in the country. This is supplemented by educational programmes procured from outside agencies, both indigenous and foreign.

To make programmes more effective and meaningful, research has been given a prominent place in planning and evaluation. This activity is carried out by trained and experienced social science/communication researchers, specially recruited for this purpose by the Media Centres to take full advantage of the research input for improving the quality of their

productions. Keeping the above in view, from time to time, researchers/producers workshops are organised.

III

The present paper deals with the procedure and findings of one researchers/producers workshop organised in 1988 at ISRO, DECU, Ahmedabad, for University Grants Commission programmes.⁶

Method

To make programmes more target group oriented, it is suggested that they should be pre-tested at various stages :

1. Script stage,
2. Production process stage, and
3. Programme completion/final stage.

For the programme discussed at the workshop, the first two steps were carried out in the respective media centres and the third at Ahmedabad.

Technique Followed in Pre-Testing

Three steps are carried out in the order given during the pre-testing of the programmes:

1. Introduction of the programme by the producer to the sample group;
2. Programme-viewing by the sample group; observation by researchers and producers. Administering of questionnaire after programme viewing; and
3. Discussion on the programme with the viewers by producer and researchers.

Procedure Followed for Pre-Testing

One by one all the programmes are viewed by the researchers and producers and then segmented according to their contents. After a post-viewing discussion, the questionnaire is framed for individual programmes. Simultaneously, observation sheets containing the segmentation of the contents to rank the order of attention span of the target audience are also prepared.

After the completion of the above exercise, the procedure to be followed during the pre-testing of the programme in the field situation is explained to the producers and researchers. During the programme viewing by the target group (students),

the researchers and the producers have to observe and record the attention span and the reactions of the students for each segment of the programme. After the viewing of the programmes by the students, a structured questionnaire is administered. To take into account the target group's reactions to any aspect of the programme that may have been inadvertently left out in the questionnaire, a discussion with the target group is initiated by the researchers and the producers as the final step.

Pre-Testing Field Preparation

The materials required for field pre-testing of the programme are :

1. Questionnaire & observation sheet (printed),
2. TV & VCR — one set,
3. Transport for carrying the above, and
4. Permission of the Principal for pre-testing the programme in the college.

Pre-Testing Process

After reaching the place of pre-testing, the sample group is assembled in a room where viewing facilities are available. Five programmes are pre-tested and these are :

- a. Links with Our Past - AVRC, Calcutta
- b. Elasticity: Stress & Strain - EMRC, Poona
- c. Ready-Get Set - Go - MCRC, JMI, Delhi
- d. Cooling By Gunny Bags - AVRC, Roorkee
- e. Invisible Work - EMRC, Ahmedabad

Methods of Analysis and Report Writing

For all the above programmes, a common plan is adopted to analyse the data; simple frequency tables are then drawn out of it. For the students attention span, a graph is plotted on the basis of segments of each programme. Each segment is divided into three levels, namely, high, medium and low.

The report is prepared on the basis of qualitative and quantitative data. An overall idea of the audience attention may be obtained by plotting the interest graph.

Recommendations

The following recommendations emerged after the discussion of the pre-testing reports of the programmes:

On the questionnaire format

On the basis of the pre-test experience, researchers should consider seriously whether open ended questions are required in the pre-testing, for instance, there are low responses to these kinds of questions.

Perhaps, some other alternative can be explored by the researchers.

Programme specific

- Script/idea should be pre-tested for as many programmes as possible. For production of series programmes, it may be advisable to go through all the stages of formative research.
- While accepting that the expert as presenter adds to the credibility of the programme, it is important to pre-test the audience reaction to the expert's presentation. In case, the reaction is unfavourable, certain remedial measures should be incorporated, e.g. the use of visuals to minimise the expert's presence on the screen and to make the point under discussion clearer.

Level of attention

- The level of attention according to observation graphs appears to be higher when either the programme is syllabus-oriented or when the subject matter or visual content itself generates interest.
- The programme duration in this pre-test exercise ranges from 9 to 25 minutes. A point for research is whether the duration in itself is responsible for a decline in interest level for educational programmes.
- In all programmes pre-tested, there is a decline in the interest graph. However, in the University Grants Commission credo, one of the points is to create curiosity. The decline in the interest is not a very positive sign; ideally, there should be a rise in the graph. This can be probed in future research.

The author expresses his sincere gratitude to Prof. S. Mishra of IGNOU for his valuable advice in preparing this paper.

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CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be contacted
Nov 7-9, 1994	VIII Annual Conference of the Asian Association of Open Universities	Theme : Structure and Management of Open Learning System	Indira Gandhi National Open University. New Delhi	Prof. C.L. Anand, Pro-Vice Chancellor, Convenor, AAOU VIII Conference, IGNOU, Maidan Garhi, New Delhi-110068
Nov 8-11, 1994	23rd IFTDO World Conference on Human Resource Development	Theme : Global Changes and Stability in 2000 AD — Strategic Issues	Indian Society for Training and Development, New Delhi	Dr. Uddesh Kohli, Conference Coordinator, Indian Society for Training & Development, B-41, Institutional Area, New Mehrauli Road, New Delhi-110016
Dec 21-23, 1994	15th Indian Society for Probability & Statistics Conference	To apprise the participants of the current developments in Probability and Statistical Research	Department of Statistics, Manonmaniam Sundaranar University, Tirunelveli	Dr. V.S. Sampath Kumar, Organising Secretary, ISPS Conference, Department of Statistics, Manonmaniam Sundaranar University, Tirunelveli-627009
Feb 3-24, 1995	Refresher Course on Business Laws in Globalizing Economy	To examine the teaching and research of Business Laws	The National Law School of India University, Bangalore	The Programme Coordinator, ASC Refresher Course, National Law School of India University, Bangalore-360072

Formative and Summative Evaluation

Vandana Mehra*
Neeru Rathee**

Evaluation

Evaluation is the means whereby we systematically collect and analyse information about the results of a student's encounter with a learning experience (Rowntree, 1974). Bloom (1971) defined evaluation as a tool in the education practice for ascertaining whether alternative procedures were equally effective or not in achieving a set of educational ends. Thorndike and Hagen (1977) regard evaluation as a continuous inspection of all available information concerning the student, teacher, educational programme and the teaching learning process to ascertain the degree of change in student and form valid judgements about the student and, the effectiveness of the programme. Improvement of teacher's teaching and the student's learning through judgement using available information is the ultimate function of the evaluation process.

Formative and Summative Evaluation

The terms formative and summative evaluation appeared first in the context of curriculum evaluation. Scriven (1967) who coined these terms, specified the differences between them, and stated that both formative and summative evaluation may examine the worth of a variety of entities such as products, processes, personnel, or learners. According to Scriven (1980), formative evaluation is conducted during the development or improvement of a programme or product (or person). It is an evaluation conducted for in-house staff and normally remains in-house, but it may be done by an internal or external evaluator, or (preferably) a combination. Summative evaluation, on the other hand, is conducted after completion of a programme (or a course of study) and for the benefit of some external audience or decision maker (e.g. funding agency or fu-

ture possible users), though it too may be done either by an internal or an external evaluator or by a combination of both (Lewy, 1989).

For several years, these terms were uniquely applied to describing various types of curriculum evaluation activities. Only later did they become generalized and employed in the context of learner evaluation (Bloom et al., 1971). An effective instructional strategy requires two types of evaluation. On the one hand, it demands constant, ongoing formative evaluation to provide information useful for directing student study and teacher practice. The evaluation is formative in the sense that it is utilized to indicate how students are changing with respect to their attainment of the instructional goals. On the other hand, an effective strategy also requires summative or end of instruction evaluation primarily to grade student achievement that provides information about how students have changed with respect to the course aims. Infact, both summative and formative evaluations are related to instruction and both seek to appraise changes in learner behaviour. Thus, evaluation during an ongoing programme is referred to as formative evaluation while terminal evaluation is called summative evaluation.

Formative evaluation is used to provide information for curriculum review, identification of the effectiveness of the instructional process and assessment of the teaching process. The purposes of the summative evaluation are the assignment of grades, certification of skills, knowledge, and abilities, prediction of success in subsequent course, feedback to students and the comparison of outcomes of different groups.

Conducting Evaluation

The rules provided by Bloom et al. (1971) for conducting formative and summative evaluation of students' learning are more specific. For formative evaluation, it is first necessary to analyze the instructional materials, to map the hierarchical struc-

*Lecturer Deptt. of Education, M.D. University, Rohtak (Haryana)

**Vice-Principal, Harkishan Memorial School, Rohtak (Haryana)

ture of the learning tasks, and to administer achievement tests after completing a short learning unit covering study materials for 6 to 10 periods of study. A sample of test items appearing in the formative tests, or equivalent items should constitute the summative evaluation test to be administered at the end of the course, with the aim of providing a basis for grading or certifying the learner.

Alkin (1974) reported that a formative evaluation study uses a great variety of instruments which are either locally developed or standardized, it relies on observation and informal data collection devices, mostly locally chosen. In contrast, summative evaluation studies tend to use well defined evaluation designs, as unobtrusive and non-reactive as possible; they are comparative and concerned with a broad range of issues, for example, implications, politics, costs, competing options. The instruments used in summative evaluation are publicly accepted, reliable and valid instruments, reflecting concerns of the sponsor and of the decision maker.

Formative tests are administered at the completion of each unit of learning and help students to pace their learning and put forth necessary effort at the appropriate time. They provide immediate and continuous feedback to the student via instruments that are essentially brief, so that they do not take up inordinate amounts of instructional time. Thus, it forces and reinforces learning mastery by providing data that can direct remedial teaching. Summative evaluation are in real sense 'final' tests of students' achievement typically covering relatively large blocks of instructional material (Airasian, 1971). In formative evaluation, scoring is based on criterion reference approach but in summative evaluation, scoring is generally norm referenced though it can be criterion referenced also. In formative evaluation, the method of reporting scores is individual pattern of pass-fail scores on each task in hierarchy, whereas in summative evaluation, attainment is reported in terms of total scores (Bloom, 1971).

The Relative Importance

Cronbach et al (1980) claimed that formative evaluation has greater impact and is therefore more significant than summative evaluation. In their opinion, evaluation employed to improve a programme while it is still fluid contributes more to the improvement of education than evaluation used

to appraise a product already placed on the market. To be influential in course improvement, evidence must become available midway through programme development and not in the home stretch, when the developer is naturally reluctant to tear apart a supposedly finished body of materials and techniques. Similarly, providing feedback to the teacher and learner about success or failure in mastering specific skills or components of the programme constitutes an essential part of the teaching-learning process. It makes it possible to spot weak points of the programme and to identify those learners who need corrective teaching. Formative information of this type contributes more to the improvement of learning than do results of end-of-course testing.

Briggs (1982), on the basis of research evidence, stressed that instructional revision based on formative evaluation increases instructional effectiveness. Scandrett (1983) compared summative and formative evaluation at a Rural Missouri High School in terms of their value to the teacher as a professional.

Scriven adheres to the view that there are no basic logical and methodological differences between formative and summative evaluation. Both are intended to examine the worth of a particular entity. Only timing, the audience requesting it, and the way its results are used can indicate whether a study is formative or summative. Moreover, the same study may be viewed by one client as formative and by another one as summative (Lewy, 1989).

Lewy (1989) pointed out that the superior usefulness of formative evaluation is so stressed in the writings of numerous evaluation experts that people dealing with specific programmes often display no interest in conducting summative evaluation studies. Scriven deplores this attitude and points out that both types of study have unique and essential roles. Summative evaluation is an inescapable obligation of the project director, an obvious requirement of the sponsoring agency and desirable for schools.

The Final Word

Evaluation is an aid to clarification of the significant objectives of education as well as a process for determining the extent to which students are deve-

loping in desired ways. Both formative and summative evaluation are invaluable as they help in increasing instructional effectiveness and enhancing students' learning, thereby bringing about gain in their performance.

Two decades of utilizing these terms for educational planning has produced little consensus concerning their distinct features. There is a need to conduct empirical studies to ascertain the characteristic method and design features of formative and summative evaluation, which might facilitate the use of formative and summative evaluation.

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Economic Security Council

His Excellency Shri K.V. Raghunatha Reddy, Governor of West Bengal, delivered the Convocation Address at the seventh convocation of Dr. B.R. Ambedkar Open University, Hyderabad. He said, "Even the highly developed neo-corporatistic welfare States are facing the problem of unemployment and increasing poverty. Eleven to fifteen percent people live below the poverty line. Human Development Report of 1994 suggested that an Economic Security Council should be set up by the United Nations to deal with problems of human development. This suggestion deserves to be examined and pursued by the universities as centres of intellectual pursuits and by the members of the United Nations". Excerpts

Open University is a unique institution to provide facilities for higher education to all those who did not have opportunity to avail of the advantages of institutions of higher learning. It is indeed highly commendable that the Dr. Ambedkar Open University has 92 study centres spread over the entire state of Andhra Pradesh and working people including housewives could have benefit of higher education. By locating some study centres in central prisons at Hyderabad, Warangal and Rajahmundry, the prisoners are also helped to enroll themselves as students of undergraduate courses and postgraduate diploma courses. This would indeed help to reform such of them also to become useful and law abiding citizens.

We may recall what Nehru said: "If the life of the mind is not encouraged, then inevitably civilisation deteriorates, the race deteriorates and ultimately both collapse in some big cataclysm or just fade away and become as other races and civilisations have become." Dr. Ambedkar University is providing highly imagina-

tive opportunities to enliven the minds of thousands of those who had no access to formal education.

Our Respected Rashtrapati Dr. Shankar Dayal Sharma said regarding the role of the University system :

"The system must inculcate and promote basic human values. It must preserve and foster our great cultural traditions and blend them with essential elements with other cultures and peoples. It must promote a rational outlook and scientific temper. It must enrich the Indian languages and promote their use as important means of communication on national development and unity. It must develop the total personality of the students and inculcate in them a commitment to society."

This is the goal which all Universities including yours should aim at.

The Universities also help in creating equal opportunities. At the time of their birth, all children are born equal but they are born into a society of castes, religions

and unequal economic conditions. They have no choice. They become heirs to all institutional advantages or disadvantages that accrue to them.

Dr. Ambedkar, the architect of our Constitution, warned at the time of adoption of Constitution of India that

"We must begin acknowledging first that there is a complete absence of two things in Indian Society one of which is equality. On the social plane we have in India a society based on privilege of graded inequality which means elevation for some and degradation for others. On the economic plane, we have a society in which there are some having immense wealth as against those who are living in abject poverty. On the 26th January of 1950, we are going to enter into a life of contradiction. In politics we have equality and in social life and economic life we will have inequality. We must remove this contradiction at the earliest possible moment or else those who suffer from inequality will blow up the structure of political democracy which this assembly has so laboriously built up."

Nehru also had expressed similar views in his book *The Discovery of India*

"If the spirit of the age demands equality, it necessarily also demands an economic system which fits in with it and encourages it". At the Lucknow Session of the Indian National Congress, he further stated :

"I am convinced that the only key to solution of world problems and of India's problems lies in socialism, and when I use this word, I do so not in a vague humanitarian way but in the

scientific economic sense. Socialism is however something even more than economic doctrine; it is a philosophy of life and as such also it appeals to me. I see no way of ending poverty, the vast unemployment, the degradation and the subjection of Indian people except through socialism."

Albert Einstein, the great scientist, also expressed the same view almost echoing what Nehru said.

He said :

"I am convinced there is only one way to eliminate these grave evils namely through the establishment of a socialist economy, accompanied by an educational system which would be oriented towards social goal."

In line with these lofty goals people of India in their wisdom solemnly resolved to constitute India into a Socialist, Secular, Democratic Republic.

The recent judgement of the Hon'ble Supreme Court of India in S.R. Bommai-Vs-Union of India is a landmark in the progress towards that end. The court had held :

"Secularism is one of the basic features of the Constitution. ... Politics and Religion cannot be mixed. Any State Government which pursues unsecular policies or unsecular course of action acts contrary to the Constitutional mandate and renders itself to action under Article 356."

Like secularism, socialism and democracy too are the basic features of our Constitution. Indeed as Acharya Vinoba Bhave said years ago :

"Indian synthesis of democracy and socialism has heightened

their respective dignity without prejudicing either of these ideologies."

The integration of democratic and socialist values and ideals gives birth to a new personality of socialist man ready for cooperation and living with others in a dynamic world, representing a synthesis between self assertive forces of liberal democratic society and altruism of socialist society. To achieve this ideal, man must march beyond a democratic socialist society into a just and moral society.

As I wrote in 1968, "A Democratic Socialist Society is not the final stage of development of man. It is only the beginning of his true moral history. Nor is social change that brings about a democratic socialist society like an irreversible chemical reaction. Its stability and effectiveness depend on the consolidation of moral effort that has helped its creation."¹

You will soon enter twenty-first century. Globalisation of world economy and emergence of technoglobalism which can be described as structural revolution, have now become an integral part of world's political and economic scene. However, the agonising reality is that in the last fifty years, since the United Nations was created, to quote Human Development Report 1994 :

"What emerges is an interesting picture of unprecedented human progress and unspeakable human misery, of humanity's advance on several fronts mixed with humanity's retreat on several others, of breathtaking globalization of prosperity side by side with depressing globalisation of poverty."²

Three quarters of humanity, i.e. about three and a half billion people live in developing countries.

"Despite all our technological breakthroughs we still live in a world where a fifth of the developing world's population goes hungry every night—a quarter lacks access to even a basic necessity like safe drinking water and a third lives in abject poverty—at such a margin of human existence that words simply fail to describe it."³

In the last fifty years, global G.D.P. increased by seven fold—from about \$ 3 trillion to \$ 22 trillion. The world population has more than doubled from 2.5 billion to 5.5. billion. The per capita income has more than tripled.⁴

The gap between the richest and the poorest is startlingly wide. At a global level in 1989—of global income—the poorest 20% had 1.4%, whereas the richest 20% had 82.7% to their respective shares.⁵

These facts remind us of a well-known Biblical statement which lays bare the nature of the operation of economic system and consequent growth of economic inequality in society.

"For unto every one that hath shall be given and he shall have more abundance and from him that hath not shall be taken away even that he hath."

Even the highly developed neo-corporatistic welfare States are facing the problem of unemployment and increasing poverty. Eleven to fifteen percent people live below the poverty line Human Development Report of

1994 suggested that an Economic Security Council should be set up by the United Nations to deal with problems of human development. This suggestion deserves to be examined and pursued by the universities as centres of intellectual pursuits and by the members of the United Nations.

Our Prime Minister, quite conscious of the prevailing situation, in his speech at the Economic Forum in Devos said :

"My realistic assessment indicates to me quite clearly that poverty will continue to be the most serious challenge to mankind during the greater part of the 21st Century if not longer. My reasons are simple. Poverty is as much a breeding ground of disunity and tension as any other factor one may cite. Those tensions are bound to dominate to such an extent that the effort to deal with poverty as the first priority will simply not succeed in many cases."

Friends, Economic growth does not necessarily lead to development. "There is no automatic link between economic growth and human progress."⁴ If growth should translate itself into development, it depends upon the socio-economic structure and role of the State. 'Trickle down' theory of development is an economic myth. 'Trickle down theory' provides only a psychological and conscious rationalisation for the accumulation of wealth by powerful elite groups.

The present shift towards market forces and monetarist policies alone by themselves cannot help to solve the problems of poverty.

Mixed economy as conceived

by Nehru is still relevant in Indian context. As our Prime Minister said, "The mixed economy concept has saved India time and again from political submission and economic dependence."

In the context of globalisation of economies and technoglobalism, we have to concentrate on Research and Development. Self-reliance should become the keynote of our development effort.

Self-reliance is not synonymous with self-sufficiency. But it means regeneration and economic growth through one's own efforts — in other words, independent economic development in contradistinction with dependent development.

However, since we live in an interdependent world and the globalisation and the processes of structural adjustment influence the patterns and magnitudes of economic development, we should have a pragmatic approach to self-reliance, and the strategy for technological transformation should occupy a central place. In this regard the universities have a significant contribution to make.

In the creation of a democratic socialist society the youth must become the pioneers. Nehru looked forward to them to create such a society. In his convocation address to Delhi University he said,

"We have to live in the present and mould the future. That duty and high task are especially cast on young men and women of today. They will have great burdens to carry and great difficulties to face. But they will also have the chance of high adven-

ture and great living for great living comes by attachment to great causes. They will have to fight the many evils that beset us and narrow us and make us unworthy of this adventure, like the evils of religious conflict and bigotry of provincialism, linguism and casteism. There is no hope for us if we allow these disruptive tendencies to influence our national life."

His sage advice is very much relevant today even to the teaching community.

Coming back to the main theme of my address, I wish to re-emphasise that to achieve the ideals enshrined in the preamble to the Constitution, a democratic-socialist state is the major premise. In such a society, the quality of human personality imbued with moral values counts more than money or position.

As Nehru said :

"A sense of values lies at the very basis of life. All culture after all is a sense of values, certain restraints and certain responsibilities joyfully undertaken."

Swami Vivekananda said :

"What the world wants is character. The world is in need of those whose life is one burning love, selfless. The love will make every word tell like a thunderbolt."

The universities should have a commitment in this regard to develop the personalities of the students imbued with moral values, to help to create a democratic-socialist society. In such a society only, they, their children and future generations can lead a peaceful and creative life without fear of insecurity of any type.

What Gurudev Tagore wrote should always be remembered by us.

He wrote :

*"Where the mind is without fear and the head is held high;
Where knowledge is free;
Where the world has not been broken up
into fragments by narrow domestic walls,
Where words come out from the depth of truth;
Where tireless striving stretches its arms
towards perfection;
Where the clear stream of reason has not lost its way into the dreary desert of dead habit;
Where the mind is led forward by thee
into ever-widening thought and action—
Into that heaven of freedom, my father,
let my country awake."*

There is no time for procrastination.

I may recall what Martin Luther King said in this regard. He said:

"Over bleached bones and jumbled residues of numerous civilizations are written the pathetic words—Too late. There is an invisible book of life that faithfully records our vigilance or our neglect."

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3. *ibid* p. 2
4. *ibid*. p. 36
5. (a) *Human Development Report, 1990*
(b) *Report of Independent South Asian Commission on Poverty Alleviation*, November 1992.

um. Another encouraging feature of this Open University has been that its rural graduates are 56.57% (1990) and urban 43.53%. Further, 61.66% belong to the Open Category, 31.24% to the Backward Category, 6% to the Scheduled Castes and 1.2% to the Scheduled Tribes Category. Since the Open University permits employed students to study, 40% of the graduates are employed.

The graduates of this Convocation include four prisoners undergoing sentence in the Chanchalguda Jail.

Master's Courses

This University introduced for the first time in September 1993, Master's Courses in such areas as M.B.A., M.Sc. (Mathematics), M.A. Public Administration and Political Science. M.A. Economics will be offered from this year.

This University functions through a networking of 92 Study Centres, including the 12 Post-graduate Study Centres, where we offer undergraduate courses — B.A., B.Com. and B.Sc. along with one-year postgraduate Bachelor's in Library & Information Science and Bachelor's in Public Relations.

In addition, the six month awareness Certificate Course in Food & Nutrition is offered in Telugu. From September this year, it will also be offered in Urdu for those who can read and write Urdu, and who would like to know about the benefits of dietetics, food, nutrition and health.

First Urdu Course

The course material translat-

(Contd. on page 20)

This University was founded in 1982 by an Act of the State Legislature as "Andhra Pradesh Open University". However, during the birth centenary year of Dr. B.R. Ambedkar, through an amendment to the Act by the Legislature, the University was renamed in memory of the great national leader of the oppressed classes as "Dr. B.R. Ambedkar Open University" in December, 1991.

Graduating Students : Social Equity

During this Convocation a total number of 3435 students have been registered to graduate. Of this number, 2019 (59%) are men, and 1416 (41%) are women. Further, an encouraging sign is the increasing number of students in the Telugu Medium — (84%), i.e., 2886 utilised the Telugu Medium and 549 (16%) the English Medi-

SPREADSHEET

INDIAN EDUCATION 1993

1. Population (Unit : Millions)			
All Communities	1951@	1991@	
Persons	361	446	
Male	196	439	
Female	175	407	
Age Groups	1951*	1993*	
6-11 Years	45	100	
11-14 Years	25	57	
6-14 Years	70	157	
Scheduled Castes	1951@	1993@	
Persons	64	138	
Male	N.A.	72	
Female	N.A.	56	
Age Groups			
6-11 Years	N.A.	16	
11-14 Years	N.A.	9	
6-14 Years	N.A.	25	
Scheduled Tribes			
Persons	30	61	
Male	N.A.	34	
Female	N.A.	34	
Age Groups			
6-11 Years	N.A.	7	
11-14 Years	N.A.	4	
6-14 Years	N.A.	11	
@Census figures; *Census of India, Paper No. 3 of 1951 Age Tables-1951 Census; @As on 13-3-93.			
2. Literacy (Unit : Percentage)			
All Communities	1951*	1981*	1991*
Persons	183	43.7	52.2
Male	27.2	56.5	64.2
Female	19	29.9	39.2
Scheduled Castes			
Persons	N.A.	21.4	37.4
Male	N.A.	31.1	49.9
Female	N.A.	10.9	23.1
Scheduled Tribes			
Persons	N.A.	16.3	29.6
Male	N.A.	24.5	40.7
Female	N.A.	8.0	18.2
+Relates to Population aged 5 Years and above.			
*Relates to Population aged seven Years and above.			
3. Institutions (Unit : 000s)			
Primary Schools	1947	1993*	
Middle Schools	141	573	
Secondary/St. Sec./Intermediate colleges	9	154	
Unit : Number	4	84	
Degree Colleges	263	534	
Universities	16	207	
Engineering/Technology College (Degree Level)	38	299	
Polytechnic/Diploma Courses	53	1040	
Kendriya Vidyalayam	771		
Navodaya Vidyalayam	280		
+ Includes deemed to be Universities and Institutions of National Importance; *Provisional.			
4. Enrolment (Unit : Lakhs)			
Pre-Primary	1947	1993*	
Primary Stage (Classes I-V)	105	1054	
(Age 6-11)*	(35%)	(104%)	
Middle Stage (Classes VI-VIII)	16	387	
(Age 11-14)*	(5%)	(58%)	

Secondary/St. Sec./Intermediate Stage (Classes IX-XII)

(Age 14-18)*

University Stage (General Eds)

Degree Level

Post Graduate Level

Engineering & Tech.

Degree Level Courses

1 31

0.8 4

0.6 3

*Figures in parentheses indicate enrolment ratio to corresponding age group population; *Provisional.

5. Enrollment of Girls (Unit : Lakhs)

1947 1993*

Classes IV (Age 6-11)*

29 48 (93%)

Classes VI-VIII (Age 11-14)*

2 150 (34%)

Classes IX and above (Age 14-18)*

1 71 (17%)

University Stage (General)

0.1 13

*Figures in parentheses indicate enrolment ratio to corresponding age group population; *Provisional.

6. Enrollment of SC/ST (Unit : Lakhs)

1947 1993*

Primary Stage (Classes I-IV)

Scheduled Castes

47 174 (111%)*

Scheduled Tribes

8 24 (108%)*

Middle Stage (Classes V-VIII)

Scheduled Castes

4 54 (28%)*

Scheduled Tribes

8 20 (45%)*

High/Hr. Sec./Intermediate Stage (Classes IX and above)

Scheduled Castes

4 27

Scheduled Tribes

8 10

*Figures in parentheses indicate enrolment ratio to corresponding age group population; *Provisional.

7. Enrollment of SC/ST Girls (Unit : Lakhs)

1947 1993*

Classes I-V

Scheduled Castes

10 70 (72%)*

Scheduled Tribes

8 33 (35%)*

Classes VI-VIII

Scheduled Castes

0.3 19 (44%)*

Scheduled Tribes

8 7 (26%)*

Classes IX-XII

Scheduled Castes

0.4 1

Scheduled Tribes

8 3

*Figures in parentheses indicate enrolment ratio to corresponding age group population; *Provisional.

8. Teachers (Unit : 000s)

1947 1993*

Primary Schools

344 (67.1%)*

1682 (95%)

Middle Schools

50 (12.3%)*

1987 (31%)*

High/Hr. Sec. Schools

93 (14.5%)*

3355 (91%)*

*Figures in parentheses indicate percentage of Trained Teachers; *Provisional.

9. Teacher-Pupil Ratio (Unit : Number)

1947 1993*

Primary Schools

132 143

Middle Schools

124 143

High/Hr. Sec. Schools

125 130

*Provisional

10. School Drop-outs (Unit : Percentage)

Primary Middle

All Communities

1971 1989

1971 1989

Total

67.0 47.9

77.9 65.4

Boys

58.9 46.7

74.8 59.4

Girls

78.9 69.7

81.4 64.3

*Figures in parentheses indicate enrolment ratio to corresponding age group population; *Provisional.

SC Students

Total Boys Girls

N.A. N.A. N.A. N.A.

49.6 47.2 53.4 73.6

67.8 64.4 79.6 81.5

ST Students

Total Boys Girls

N.A. N.A. N.A. N.A.

64.5 61.1 68.7 70.2

78.1 76.2 81.5 83.3

11. Non-Formal Education (As on 31-3-1992) (Unit : 000s)

Age Groups Number of Centres Number of beneficiaries

6-11 Years 254 6344

11-14 Years 12 309

12. Adult Education

Unit Number of Total Literacy

Campaign/Projects Number

Number of beneficiaries

Lakhs 6 455

13. State and Central in Engineering and Technology (Unit : Number)

Age Groups

Degree Level Courses 1947 1991

2,940 40,000

Diploma Level Courses 2,600 32,000

State Capacity 3,670 80,000

Out Turn 3,300 55,000

14. Expenditure

Unit 1947 1991

Total Education (Rs in Crores) 55 20491

Per Capita Expend. (Rs in Rupees) 2.20 242

Budgeted Expenditure in Education by Education and Other Departments-1992-93 (B.E.)

Plan (Rs in Crores) 5435

Net Plan 55 19731

Total 55 23156

15. Plan Outlay

(Rs in crores)

Seventh Plan (1985-90)

Approved Outlay

16. Literacy (Percentage)

1951 1981 1991

Persons 16.2

Male 7.1

Female 42.5

1951 1981 1991

Persons 16.2

Male 7.1

Female 42.5

1951 1981 1991

Persons 16.2

Male 7.1

Female 42.5

(Contd. from page 17)

ed by Dr. B.R. Ambedkar Open University's Urdu Translation Project from Indira Gandhi National Open University's English course material forms the first course on Food and Nutrition in Urdu which would also serve the students wherever IGNOU may choose to introduce Certificate Programme in Food & Nutrition in Urdu.

Guidelines : Accountability, Cost-effectiveness and Academic Excellence

The Board of Management has approved a broad policy guideline for the functioning of this University to meet its objectives effectively. These are Cost-effectiveness in financial management, accountability in the academic and administrative sectors and academic quality assurance and excellence.

New Courses Proposed

The University has finalised plans to introduce from the academic year 1995 one-year post-graduate diploma courses of social relevance and contemporary value such as Environmental Studies, Women's Development Studies, Writing for the Media in Telugu, Business Finance, Marketing Management, Office Management and General Laws. Further, with proper infrastructural coordination it is also proposed to start postgraduate diploma courses in Industrial Microbiology and Groundwater Exploration and Management.

Enrolment of Learners : Increased Outreach

During the last academic year

which commenced in September 1993, the total number of students of all courses put together was 60,000. This does not include the number of students who carry backlog, as the Open University system allows flexibility to complete three-year counselling at the end of nine years. If the backlog is included, then the total students would cross 1.4 lakhs. Of these students, 60 are enrolled for Ph.D. programmes, 90 for M.Phil, for which intensive contact classes are held in summer and winter by the Centre for Economic and Social Studies (CESS) and the degree is awarded by Dr. B.R. Ambedkar Open University.

For the current academic year for which admissions are granted till September 30, 1994 for the Master's courses, the projected total number of students of all categories of courses is over 61,000, marking an increase by about 1000 students.

SC/ST Cell

Realising the special needs of the downtrodden and deprived learners, the University has created an SC/ST Cell. The Cell monitors and takes care of the needs of the students especially in the Study Centres and coordinates with government agencies in safeguarding the interest of SC/ST students.

Scholarships & Freeships

The University exempts eligible unemployed SC/ST students from payment of tuition and other obligatory fee. During 1993-'94 this facility was availed of by 3000 SC and ST students.

The University also disbursed scholarships sanctioned

by the Department of Social Welfare to 151 physically handicapped students.

Furthermore, this University is extending Commonwealth of Learning scholarships of Rs. 500/- per student to both men and women on 50-50 percent merit-cum-means basis. During 1993, the University received 5,000 Canadian Dollars (i.e., Rs. 1,22,026/-) from the Commonwealth of Learning to be disbursed to 250 students as scholarships.

Mobile Science Van

This University has more than 11 years of experience of offering Science courses (B.Sc.) through the distance mode of teaching including lab work. Dr. B.R. Ambedkar Open University is the only Open University offering a Mobile Science Van costing over Rs. 5 lakhs with funds from the Commonwealth of Learning (COL) added in November, 1993. This Mobile Lab Van will be utilised from this academic year to enable students in remote parts of the State, to do science practicals.

Women's Development Studies Cell

In pursuance of the national policies for women and to meet the aspirations of the women students of the Open University who form about 36% of the Learners, the University started a Women's Development Studies Cell in July, 1993 to study the problems of the women students and the barriers to women's education in the state. I may incidentally add that nearly 33% of the employees are also women. The Cell has taken up research projects and exten-

sion activities in support of the objectives.

Audio-Visual Production & Research Centre

The Audio-Visual Production & Research Centre of this University has been upgraded to streamline and update the skills of the technical and production personnel. The Centre has now initiated hands-on training for producers and technicians in collaboration with other institutions in the field. It has also acquired a Field Van to undertake location shooting and to coordinate the functioning of Audio-Visual equipment in the study centres.

It has already produced during the last one year or so over 30 viewer friendly video cassettes on different subjects of learning.

This is the only Open University in the country to have lessons broadcast on All India Radio four days a week. Now with the introduction of the educational television channel DD-8 at Doordarshan, Hyderabad Kendra has agreed in principle to give us a 20-minute 3-times a week time slot hopefully from Gandhi Jayanthi Day, October 2, 1994.

To keep pace with the global trends of competition and quality assurance in education including evaluation by Accreditation Council, this University has submitted two of its courses, B.Com. & B.L.I.Sc., for Accreditation Council's evaluation.

Consultancy Projects

The University has also a project consultancy and collaboration programme in research.

Two recent examples are : (i) production of video cassettes on rural development, specially in the tribal regions for which the University has entered into an agreement with the Panchayat Raj Department of the Government of Andhra Pradesh and (ii) a project under aegis of the Election Commission on the exercise of franchise by the various age groups.

Staff Training & Development

This University established in April 1993, a Centre for Staff Training & Development to impart training in specialised skills required for distance education teachers, administrators, counsellors and other employees. The Centre has already held three regional Workshops for Principals and Coordinators which gave vital feedback to the University on revamping its policies, distribution of learning materials and the need for learner-friendly audio-visual components in counselling. Certain cost-effective measures of financial management of Study Centres emerged from this interaction. Orientation programmes have been designed to induct faculty in scripting and production of audio and video learning material in addition to

self-instructional format-based writing. The Centre has held 12 training workshops for counsellors, teachers and non-teaching personnel relating to distance teaching and student support services.

Library

The University's New Library is nearing completion at a cost of Rs. 56 lakhs. The University has added over 7000 books to the Library during the financial year 1993-94 and by mid-year 1994 at a cost of Rs. 10 lakhs.

Media Library Unit & Documentation Service

A new feature added in 1993 to the University Library is to provide current contents awareness as also documentation and abstracting service, especially to help the Master's students and P.G. counsellors. A Media Unit is also being added now so that students can listen to audio cassettes as well as view video cassettes produced not only by this University but by the U.K. Open University, International Council for Distance Education (ICDE), Commonwealth of Learning (COL), etc.



INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

Ph.D. PROGRAMME & RESEARCH ASSOCIATESHIP

Applications are invited before November 11, 1994 for admission to the Ph.D programme in all disciplines of Engineering & Technology, Science, Architecture, Management, Regional Planning, Humanities & Social Sciences. Candidates with appropriate qualification and with valid GATE SCORE, NET (for Humanities) and also sponsored candidates working in industrial organisations possessing the required qualifications may apply.

Application forms and related information may be had from the Assistant Registrar (PGR), IIT-Kharagpur-721 302 by sending a self addressed (24 x 15 cm) envelop plus Rs. 50/- by Demand Draft drawn in favour of Registrar, IIT-Kharagpur on State Bank of India, Kharagpur - 2. Candidates who have Ph.D. degree and intend to carry out advanced research work may apply for a Research Associateship on plain paper with complete bio-data enclosing copies of testimonials and a fee of Rs. 50/- by crossed Demand Draft in the manner shown above.

Workshop on Course Material in Distance Education

The Centre for Distance Education, Osmania University, Hyderabad organised a week long UGC Workshop on Transformation of Course Material of Institutes of Correspondence Courses (CCIs) to the self-instructional distance education format from 22 - 27 August, 1994.

While inaugurating the workshop, Professor M. Malla Reddy, Vice Chancellor of Osmania University said that the universities in the South had contributed a lot in the building up of correspondence education. This region had the largest concentration of correspondence courses institutes (CCIs) and distant learners in India. He observed that in many courses, the performance in correspondence courses students had been much better than that of the conventional system students. Prof. Malla Reddy asserted that the distance education in India was gaining momentum and we already had about 46 CCIs, catering to the educational needs of lakhs of learners. However, he felt that there was much more to be done, specially in respect of quality. The role of people working in correspondence/distance education institutes and the open universities should be the pursuit of excellence. He said that in the conventional system, the classrooms were getting empty whereas students in the distance education system had better motivation, keenness and study habits. A time will soon come when the distance education institutes will

draw very large number of students because the self-learning printed course material provided to them and the access devices and other media made learning more attractive and effective. The UGC therefore, he felt, had rightly given priority to the improvement of quality of the printed course material.

Prof. Bakhshish Singh, Consultant, UGC in his observations said that the idea of the workshop was to give orientation to the participants on the transformation of printed course material to the self-instructional distance education format. He emphasised the importance of printed course material for correspondence and distance education students because that was the mainstay of instruction in all types of distance education and open teaching learning systems. In most of the CCIs the lessons needed quality improvement. Since the Distance Education students studied in isolation from their teachers and fellow-students, we have to build the teacher into our lessons or units. For this, the course-writers must realise that the lessons were not textbooks. We have to make the students feel that they were listening to their teachers. Therefore, the lessons have to be written in personal style. The language should be simple so that the content is comprehensible to the learners. We have also to ensure coherence and logical deve-

lopment of the content. We may have

- a brief introduction and link-up with the previous lessons;
- objectives of the lesson (and of the course if it is the first lesson);
- break-up of the content into parts;
- summary;
- glossary of difficult words and phrases;
- self-instructional and distance education format of lessons with self-check exercises;
- attractive get-up, good paper and careful printing free of mistakes and howlers;
- students assignments (SAs) — their proper evaluation with helpful comments by the teachers. Questions should demand some originality in answering;
- shortest possible turn-around time of the assignments;
- marks/grades awarded for the SAs should be given due weightage, say 25 - 30% and treated as continuous evaluation; and
- try-out of material on the target group and recasting of lessons on the basis of the feedback.

Referring to other technological media, Professor Singh stressed the necessity to supplement instructions provided through the print material. He suggested a judicious selection of the media easily available to us and the students e.g. Radio, Television, Audio and Video Cassettes.

He also referred to

- dual mode,
- the role of international agencies — COL, ICDE etc,

— the role of national agencies — IGNOU, DEC, STRIDE & UGC, and

— Student Support Services comprising a number of well organized study centres. The centres should have good facilities of library and play-back of audio-video cassettes, face to face contact i.e. counselling and personal contact programmes, facilities for practical work in the labs of colleges/universities. Very few CCIs had study centres, he said, and that was adversely affecting quality.

While making his observations on the future projections, Prof. Singh said that at present over 11% of the total enrolment for higher education in the country was covered by CCIs.

The Planning Commission wanted 50% of the future increase in enrolment for higher education to be covered by the distance education system. By the end of the Eighth Five Year Plan we expect to have over 16 lakhs of students studying through distance education. The conventional universities had reached a saturation point and we can't afford to open mere conventional universities. Even standards have fallen in most of the universities. This posed a serious problem for the country. That is why UGC and IGNOU were laying great stress on the revamping of CCIs to the distance education mode so that they could take on the additional load. And the most crucial aspects that needed to be improved were:

1. Staff Development or training of teachers who may then act as resource persons for helping their colleagues by providing the orientation about the transformation of lessons to the self-instruc-

tional distance education pattern;

2. Printed course material;
3. Proper Evaluation of Students' Assignments (SAs);
4. Induction of technological media;
5. Student Support Services;
6. Computerisation;
7. Feed-back from learners, teachers etc; and
8. Monitoring of various operations to eliminate delays in the delivery of course material, turn-around time for the return of SAs etc.

"If we implement recommendations contained in the UGC document "Upgradation of CCIs to the Distance Education Mode" and the recently circulated Action Plan evolved at the COL-UGC-DEC Roundtable-cum-Seminar, we can certainly bring about the very much needed improvements", said Prof. Singh. IGNOU and UGC were keen that the CCIs should join the mainstream of distance education. That would ensure quality and networking. COL too was very keen on this and was doing active work in this direction. Prof. Bakhshish Singh said that STRIDE, under the dynamic leadership of Prof. B.N. Koul, was making rapid strides to train teachers through such workshops, seminars and its Diploma and Master's programmes in distance education.

"Our main focus is on the orientation of participants in writing self-instructional lessons/units in the distance education format and help each participant to recast two lessons in his/her subject to the proper distance education pattern, so that these lessons may serve as model

lessons for their colleagues in other subjects", Prof. Singh added.

Dr. R.P. Gangurde, Additional Secretary, UGC said that majority of the correspondence courses students were those who didn't get admission to the conventional system. He made a strong appeal to the conventional universities to stop private appearance in courses which they offered through correspondence/distance education system. That would help in preventing dilution of standards. He also expressed surprise that some state governments took away 30% of the savings of CCIs and regretted the tendency of some universities utilizing the surplus of their CCIs for building up other departments and not ploughing back the surplus for the development of correspondence courses. He hoped that the workshop will realise its important objective of transforming the course materials of CCIs to the distance education mode.

Professor B.N. Koul, Pro-Vice Chancellor, STRIDE (IGNOU) while explaining objectives of the workshop said that correspondence courses were moving to distance education and that it was a sociological change. People needed to be informed that distance education could perform well. Policy makers and the men who matter in the field of education must be made aware of the necessity and urgency of transforming CCIs to the distance education mode. The task of the workshop, he said, was of a professional nature as there was urgency of transforming CCIs to the distance education mode. As such this workshop was a significant programme because it marked the beginning of a move to that direction. The theme selected for

the workshop was of top-priority aimed at improving the quality in distance education. The lessons of CCIs will have to be improved and transformed to the self-instructional distance education format.

The participants were given orientation on inputs on the preparation of a concept map and were put in different groups according to their subjects. They were given the practical task of preparing the concept maps. This was a three-tier operation within the groups.

In another session, the participants were given orientation on objectives, face to face sessions in any distance education system and on basic padagogic functions of instruction.

The first session on 24th August was devoted to, "inputs on objectives, padagogic functions of the study unit including group work and preparation of objectives. Orientation was also given on inputs on intext questions, summaries and glossaries". In this session, the expert gave individual attention and feedback to participants on their exercise on "introduction" and "concept maps", while the participants worked on intext questions, summaries and glossaries.

On 25th August the groups were set the task of preparing first draft of transformed units. During the second session, they were provided with inputs on assignments, study package. The groups then worked on transformation of units and completed the task.

26th August was devoted to group work on the preparation of a check list for evaluating the

padagogic andogogic strengths and weaknesses of the study units. The participants worked in groups on application of the checklist to the units prepared for improving them finally.

Professor Bashiruddin, Vice Chancellor of Dr. B.R. Ambedkar Open University delivered the valedictory address.

19 participants from 8 CCIs attended the workshop.

Promoting Research in Technical Education

The All India Council for Technical Education (AICTE) is reported to have formulated two schemes for young teachers and superannuated professors in a bid to give a fillip to research work in technical education.

Career Award Scheme

The career award scheme for young teachers envisages identification of young, talented teachers who have established their competence in their area of specialisation. The aim is to promote professional growth by enabling them to devote maximum effort in research and study with minimum teaching responsibilities.

The awards will be offered for a period of three years to lecturers and assistant professors/readers working in universities/colleges/institutions of technical education, especially in engineering and technology and architecture, town planning and applied arts and crafts.

The 10 positions available every year, will be aimed to spot young academicians with high competence and encourage and support them in thrust areas where strategies are to be evolved

to meet the needs of the future through innovations and futuristic technologies.

A selection committee will be responsible for selecting candidates for this award and once selected, the Council will provide the awardee his/her full salary and allowances plus a research grant up to Rs 2 lakh for the total award period. The awardee will also be entitled to holidays and to such other privileges as per his/her entitlement.

The awardees will decide utilisation of research grant for the purchase of books, journals and equipments and also expenditure towards contingency which would be audited by university/college as any other departmental expenditure.

Emeritus Fellowship

The scheme of emeritus fellows is intended to utilise the services of highly qualified and experienced superannuated professors in technical education institutions/universities to enable them to pursue active research in their respective fields of specialisation.

The 50 fellowships, according to the sources, are available to candidates for a period of two years up to the age of 65 years. A fixed honorarium of Rs 5,000 per month in addition to the awardee's provident fund/pension payment will be given by the AICTE. In addition, the awardee will be given a contingent grant of Rs 500 per month for secretarial assistance and other services.

Audio-Vision : New Method in Education

The Yashwantrao Chavan Maharashtra Open University (YCMOU) is reported to have

developed a new technique called audio-vision for its newly-launched diploma in general electronics programme, which is open to students who have completed the Secondary School Certificate (SSC) and is being offered through the distance method of instruction.

The average Indian student is unable to buy a video-cassette recorder or a television set with the video cassettes required in the self-learning system of the open universities.

On the other hand, he is deprived of the personal teaching in the classroom system of the conventional university. To overcome this difficulty, the YCMOU has developed this new method.

This newly-developed audio vision technique offers students the benefits of both systems with a small one-time investment in a walkman which costs between Rs 400 and Rs 500. The YCMOU has developed a special companion book to be used with the walkman.

In a very simple technique, the student listens to an audio cassette which explains a topic in an expert teacher's voice. He is expected to look at the left page of an illustrated companion book called the "frame", with important key words on it and a brief explanation.

At his convenience, he stops the walkman and looks at the right hand page of the companion book which has been divided into three parts. The lower third part contains questions on the topic he has just studied. He writes down the answers in the middle part of the right page and after turning the page, can check their veracity

against the answers printed on the upper side of the next right page.

There is another "frame" on the left side containing details of the next topic. Thus, with the audio replacing the teacher and the "frame" simulating the traditional backboard on which a teacher scribbles key words while explaining a topic, a situation is created which resembles a portable classroom. The student can carry this companion book anywhere and by starting the walkman at his will, can study anywhere he pleases.

According to Drs. Gaikwad and Sahasrabuddhe, who have developed this technique, this system has advantages over the conventional as well as the distance-learning system. In distance learning, the students are deprived of companionship, competition, and interaction. Even in a classroom, after listening to a lecturer for some time, they lose their concentration and do not take in fresh inputs of information.

But the two innovators claim that in this process, the students are actively involved in the learning process because of thinking, computing, drawing, calculating and jotting down answers. Several million students in Asia should benefit from this new technique, it is claimed.

Colleges Forum Meet - 1994

The Third National Annual Conference of Indian Colleges Forum will be held on 28th and 29th December, 1994 at D.A.V. College, Chandigarh.

The themes of the conference include

- i) Challenges of college administration in mid 90's;
- ii) Making college education practical — the policy and resource implications;
- iii) Liberalisation of economy and the colleges.

Contributions on these themes may be sent to Dr. K.S. Arya, Principal, D A V College, Chandigarh by the end of October, 1994.

Further details may be had from Dr. K S Arya, Principal, D A V College, Sector - 10, Chandigarh -160 010 or the Secretary, Society for Education and Economic Development, J/23, Sarita Vihar, New Delhi - 110 044, or Post Bag No. 16, Hauz Khas, New Delhi - 110 016.

DU Pact on Teaching Kits

Delhi University and Department of Science and Technology, Govt. of India have signed an agreement on transfer of technology of low-cost teaching instruments to two reputed companies.

The instruments, including PH meter, colorimeter, conductance meter and thermometer, have been developed by Dr K.V. Sane of the Chemistry Department of the University under a DST-sponsored project.

Under the terms of agreement the licensee should pay to the DST royalty at the rate of five per cent of the sale value of the product sold for a period of five years from the date of commencement of commercial production. Fifty per cent share of the royalty is to go to the University.

Michael Madhusudan Award for R K Singh

Prof R K Singh, Professor and Head of the Department of Humanities and Social Sciences, Indian School of Mines, Dhanbad has been conferred Michael Madhusudan Award 1994 in recognition of his outstanding contribution to Indian English Poetry. Instituted by Michael Madhusudan Academy, Cal-

cutta, the award comprises a scroll of honour alongwith a plaque. Others honoured with the award included Prof Asit Kumar Bondhyapadhy (Education), Mr. Hiteswar Saikia (Socio-Culture and Economics), Mrs. Indrani Sen (Hindi Rabindra Sangeet), Dr G C Bhattacharjee (Science), Mrs. Tanusree Shanker and Mrs. Alokana Roy (Dance) and Mr. Ranajit Kumar Mallick (Film).

the solutions of their problems pertaining to agriculture and live-stock. According to Dr. A.S. Faroda, Director of Extension Education, agriculture literature in adequate quantity was also made available to the visiting farmers and farm women.

Sh. Devender Singh, President, Punjab Haryana and Delhi Chamber of Commerce and Industry (PHDCI) addressed the farmers on setting up agriculture based small scale industries.

Dr. S. Arya, Vice Chancellor, CCSHAU disclosed that a Farmers' Advisory Centre would be set up at the University very shortly. From this Centre all necessary information and guidance in setting up of agriculture-based industries like Food Processing Units, Hybrid Seed Production, cultivation of medicinal and aromatic plants, oil extracting units, cornflake units as also the bank loan facilities would be imparted to the farmers. Dr. Arya advised the farmers to get maximum benefits from the facilities available at CCSHAU for their betterment.

Improving Rice Quality

The Tamil Nadu Agricultural University (TNAU) will take up a Rs. 6.89 lakh scheme with the help of the Indian Council for Agricultural Research (ICAR) to genetically enhance the quality of rice for higher productivity and export.

The botany unit of the Tamil Nadu Rice Research Institute, Aduthurai, Thanjavur, would take up the three-year project and attempt to breed high yielding export quality non-basmati rice through hybridisation and selection process.

Translucent long slender grain and high milling recovery are among the norms fixed for the rice.

News from Agricultural Universities

Green Gram Pod Stripper

A comb type hand operated tool has been developed by the scientists of Jawaharlal Nehru Krishi Vishwa Vidyalaya (JNKVV) which removes green pods from fresh gram plants. A person can thresh pods from 15-20 kg. green plant in one hour. It is estimated to cost about Rs. 10/- per piece.

Encouraged by results, an electric motor driven Gram Pod Stripper has been further developed which can thresh gram pods from about 75 kg. green plant in an hour.

This machine has been developed by Dr. C.K. Techchandani, Senior Scientist and Head, Department of Post-Harvest Process and Food Engineering, College of Agricultural Engineering, JNKVV, Jabalpur.

Traditionally green gram pods are consumed green fresh or after boiling or roasting. Conventionally pods are sold in market alongwith green plants. For this, the bulky green plant with gram pods is transported from farm to urban areas and markets. With the development of this machine, the transportation of green pods from villages becomes an easy proposition.

Green pods can also be packed in cartons like grapes and transported to distant places to fetch higher returns. This processing machine eases the transportation problems, save storage space and make green gram pods a value added product.

Silver Jubilee Farm Fair

Chaudhury Charan Singh Haryana Agricultural University (CCSHAU) organised the two-day Silver Jubilee Farm Fair in which thousands of farmers from Haryana and adjoining states participated.

The visiting farmers were shown the standing bumper kharif crops of bajra, cotton, sugarcane and pulses etc, and the new technology applied in their cultivation was explained. Demonstrations were given on the application of new technology in the sowing and growing of rabi crops. Farmers got tested samples of their field soil and water at the Mela site.

The University made elaborate arrangements for the sale of improved seeds of rabi crops.

Question-answer sessions were held on both the days where the farmers got from the experts

News from UGC

Countrywide Classroom Programme

Between 15th October to 31st October, 1994, the following schedule of telecast on higher education through INSAT-ID under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 1.00 p.m. to 2.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

15.10.94

"Comet Austin"
"Stress Management"
"Mayurbhanj Chhau"

16.10.94

"Rocks and Mountains"
"The Silver Beaters"
"The Week Ahead"

18.10.94

"Question Time"
"Special Education for the Disabled"

20.10.94

"Aluminium — Part III"
"The Indian Edible Oyster"
"Role of Herbal Medicine"

22.10.94

"Conjecture and Proof in Mathematics — Part I"
"Budget"
"A Search for Young Theatre Talents"

23.10.94

"Sowing"
"A Window into the Francophone World"

"The Week Ahead"

25.10.94

"Solar Cooker"
"Inside the Lung Bronchoscopy"
"Physical Properties of Minerals"

27.10.94

"Aluminium — Part IV"
"Teaching as a Career"
"Hygiene Plus Disease Minus"

29.10.94

"Conjecture and Proof in Mathematics — Part II"
"Shock of Survival"

30.10.94

"Question Forum"
"Medical Geography"
"The Week Ahead"

2nd Transmission

1.00 p.m. to 2.00 p.m.

15.10.94

"Programme on Management"
"Sculpturing"
"The Week Ahead"

16.10.94

No Telecast

17.10.94

"Question Time"
"Beyond Green Pastures : A World of Rural Non-farm Sector — Part I"

18.10.94

"The Transantarctic Scientific Mission"

"Essentials of Scientific Writing"

"Iron Armour with a Spoon of Salt"

19.10.94

"Contemporary Art and Print Making"

"Affinities and Differences : The Two Martial Arts of India"

"Prawn Farming : Science of Prawn Farming"

20.10.94

"High Voltage Electrical Engineering"

"The Indian Tribes"

"Arms and the Man — Part I"

21.10.94

"The Girl Child : From Pity to Power — Part I"

"English for Business Communication"

"Environmental Toxicity"

22.10.94

"Programme on Management"

"Art During Renaissance"

"The Week Ahead"

23.10.94

No Telecast

24.10.94

"The Electromagnetic Spectrum"

"The New Economic Policy"

"Beyond Green Pastures : A World of Rural Non-farm Sector — Part II"

"Plasmid DNA Purification"

25.10.94

"Evolution of Money"

"Handicrafts — Toil, Tool and Talent"

"Biological Heart Valves"	"Sports Acrobatics"	"ध्वनि प्रदूषण"
<u>26.10.94</u>	<u>30.10.94</u>	<u>21.10.94</u>
"Evolution of Manufacturing"	"The Week Ahead"	"समझ सिनेमा की - भाग 15"
"Sculptural Heritage of Kanchipuram"	No Telecast	<u>24.10.94</u>
"Health Communication : Obesity"	<u>31.10.94</u>	"सितारों के नक्शे कदम को छूते हुए"
<u>27.10.94</u>	"Interview with the Bhatnagar Awardee Dr. Rajaiah Simon"	"शैवाल - एक जैविक उर्वरक"
"Wasteland"	"Application of Total Quality Management Concepts : Indian and British Experiences"	<u>26.10.94</u>
"A Pet with a Difference"		"विविधता में एकता - शेषण के सपनों का भारत"
"Arms and the Man - Part II"	Hindi Telecast	"ईधन बचाइये"
<u>28.10.94</u>	प्रातः 6.00 से 6.30 बजे तक	<u>28.10.94</u>
"Question Forum"		"समझ सिनेमा की - भाग 16"
"The Girl Child - From Pity to Power - Part II"	<u>17.10.94</u>	"चन्द्र चित्र बालिका के"
"Radiation and its Applications"	"जागेश्वर मन्दिर - भाग I"	<u>31.10.94</u>
<u>29.10.94</u>	"जागेश्वर मन्दिर - भाग II"	"देखो सूरज को गौर से"
"Programme on Management"	<u>19.10.94</u>	"टाइटेनियम - अद्भुत धातु"

SCHOOL OF CORRESPONDENCE COURSES ANDHRA UNIVERSITY: WALTAIR, VISHAKHAPATNAM

NOTIFICATION FOR B.A./B.COM./B.SC. SUPPL. EXAMS. OF NOVEMBER/DECEMBER, 1994 (For Regular and Single Sitting System)

The last date for the receipt of Examination Applications together with the prescribed fees for the Supplementary examinations of 1994 to be held in November/December, 1994 for the candidates appearing for B.A., B.Com. and B.Sc. Degree Examinations (under Common Core Scheme) for regular and Single Sitting System through the School of Correspondence Courses is 11-10-1994. Applications received after the due date of 11th October, 1994 will be accepted on payment of the penal fee at the following rates:

Upto 17.10.1994	Rs 10/-
Upto 22.10.1994	Rs 50/-

The notification applies to the candidates appearing under Common Core Scheme through the School of Correspondence Courses only. The dates of commencement of B.A./B.Com./B.Sc. under Common Core Scheme are as follows:

Examinations	Date of Commencement of Examinations
I year B.A./B.Com./B.Sc	23-12-1994
II year B.A./B.Com./B.Sc.	14-12-1994
III year B.A./B.Com./B.Sc.	15-11-1994

Applications received after 22nd October, 1994 will not be accepted even with maximum penal fee. Incomplete and defective applications will be summarily rejected.

Examination application forms and other particulars relating to the commencement of examinations, mode of payment of examination fee, list of examination centres, etc., will be sent to all the students of the School of Correspondence Courses who are studying B.A./B.Com./B.Sc. under Common Core Scheme.

Waltair
Dt. 24-9-1994

PROF. V. ABRAHAM
DIRECTOR

Productivity and Higher Education

P C Bansal*

Richard E. Anderson and Joel W. Meyerson, Ed. Productivity and Higher Education: Improving the Effectiveness of Faculty, Facilities and Financial Resources. Princeton, New Jersey, Peterson's Guides Inc., 1992. Pp x+134. \$ 27.95.

Productivity and Higher Education formed the substance of a symposium on Productivity in Higher Education organised by Forum for College Financing and National Centre for Post-Secondary Governance and Finance. The contributors offered suggestions for improving the efficiency of such areas as faculty, administration and support services, financial management, campus facilities and technology transfer. The key theme was to empower individuals and groups and implement their processes for improving productivity. Rising costs in higher education have urged college and university administrators to explore opportunities for cost reduction and to develop techniques to improve productivity. It is observed that productivity and higher education are linked at the centre of a wide ranging debate on our nation's campuses. At stake is the financial health of our colleges and universities, and with it the quality of higher education.

In the introduction, Sean C. Rush writes that increased productivity must become imbedded

in institutional cultures for the longterm reasons of quality and robust survival. It is suggested that each institution must be sized programmatically and administratively to fit its available resources given its mission and quality standards. Stephen Joel Trachtenberg opines that no doubt, some thing must be done to improve the productivity of our institutions of higher education, but there are many people in the academies, who think of productivity and higher education as mutually exclusive.

In a comprehensive paper, Robert Brimbaum endeavours to clarify the issue of increasing productivity in higher education in the light of rational, cultural, political and cognitive constraints that currently define its reality. He writes that productivity in higher education is influenced by an interacting web of administrative policies, environmental pressures and political processes. The balance among these elements is determined by an institution's history and culture as well as by the cognitive operations that influence judgements made under ambiguous circumstances. It is suggested that for poor institutions increased support is neces-

sary if they are to reach or maintain acceptable level of quality. Moreover, information about comprehensive institutional workload trends, while less available would have been more substantiating. Programmes to improve productivity must complement faculty attitudes and values — not conflict with them, if they are to be successful. Supporting investment in equipment and personnel to give faculty to work with students, providing resources to develop data systems, focusing attention on improving quality rather than reducing costs; providing support for faculty and administrative inservice development programmes; supporting and encouraging the development of internal communication system; and supporting institutional leaders rather than working as watch dogs or critics. He opines that we should place more reliance on the proven resilience of our colleges and universities and on the best efforts and judgements of their leaders as they respond to the pressure of the market place. The perceived lack of productivity in higher education may lie less with our institutions and more with our measurements: money may not be the best measure of the value of services. Recently, to ensure better education particularly at undergraduate level, leaders of six regional accrediting groups met with the heads of six major associations representing more than 2000 colleges and universities in Tucson, Arizona and agreed to develop a common set of new standards to look at issues like curriculum and teaching effectiveness. (*The New York Times*, Jan. 30, 1994.)

William F. Massy suggests that school administrators should recognise faculty efforts to develop new and more productive teaching techniques when setting salaries and making promotions and tenure decisions. For higher education in these times an important and visible component of the right thing must be to maximise the productivity of administration and support service. For this, the institutions must invest in information technology. There is a need for effective feedback, the ability to assess the gap between performance and expectation, for mid-course correction. The design of productive programmes must include output measures to assess how the programme is going. George R. Houston Jr., writes that the higher education community must do a better job of explaining cost increases. The chief financial officer must work to improve the productivity of the financial office and in so doing point the way towards more productive practices for other areas of the university.

Harvey Kaiser opines that effective maintenance management can be achieved through an ongoing analysis of the system that make up the overall operation. Building maintenance represents 30 to 36 per cent of an institution's operations and maintenance budget. Results of the review identify problem areas for immediate attention and opportunity for further study. There is a close relationship between programme effectiveness and productivity. John T. Hackett, suggests that colleges and universities may find privatisation a way to cut costs, without cutting services. Such opportunities can be explored in services like food,

cleaning and maintenance, student aid, cash disbursement, student record and housing. It would relieve an institution of cost and administration of student housing, and permit it to focus on its primary mission — teaching and research. One example of privatisation is the growing use of part time faculty. It is emphasised that at minimum selective application of privatisation can result in better understanding of comparative costs and efficiency.

Edward L. MacCordy writes that university research has been responsible for many discoveries that have benefited society. Successful delivery of a useful product or process to the public requires coordinated efforts among the academic investigator, the university and the industry. The formula for successful technology transfer involves creating incentives for the academic investigator, the university and the industry to deliver the benefits to the public. The strategy at minimum aims to define institution's plan for administration of the programme, detect and develop new technology, establish and defend proprietary rights to that new technology, avoid involvement in catastrophic litigation and pursue multiple means for transfer to be accomplished. Such a strategy can be beneficial to faculty, the university, the community, the country and society at large.

John H. Pencavel examines how trends in education are affected by economy and warns of the implications of a sustained economic slow down on education. He reports that the causes of nation's economic growth slow

down are unlikely to be attributable to changes in higher education. There has been a shift in the growth of labour productivity over the years. For example, between 1950 and 1973, U.S. labour productivity grew 2.5 per cent per year, while it increased only 1.0 per cent per year between 1973 and 1984. The link between the generation of new ideas in colleges and universities on the one hand and the rate of economic growth on the other are multiple and complex. But, the reduction in America's economic growth rate has resulted in harder times for higher education. Reversing the productivity slow down requires substantially high quality of labour force or greater research and development effort by the industry.

In sum, Productivity and Higher Education will go a long way in the optimum utilisation of the scarce resources and improving the quality of education in United States, and other countries as well. It will be of interest to both academicians and administrators alike.

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REGISTRAR

COMMUNICATION

Another Addition?

I have read the review of *Practice in English* (University News 15 August 1994, Pp. 29-30). One couldn't care less about the reviewer's dislike (or ignorance!) of Arabic, but one wonders whether the learned reviewer could cite a single example from "Punjabi, Hindi, or Sanskrit" to illustrate the point made with reference to the Arabic tense form in the concerned section on time and tense!

The reviewer may be recommended the reading of an interesting classic—"English Bards and Scotch Reviewers" though the authors don't claim to be English bards and the reviewer's malice and presumptuousness cannot match that of the funny Scotch reviewers.

S.N.A. Rizvi, Deptt. of English,
Zakir Hussain College,
New Delhi-110002

Dr. R K Singh Writes

Dr. S.N.A. Rizvi's communication makes me see his books once again. I am convinced I have been fair in my review and assessment of the books (University News 15 August 1994) in the light of his aims and objectives as stated in their 'Introduction', i.e. to teach the basics of communication in English and to satisfy the examination needs of B.Sc., B.Com., B.A. (Pass and Hons.) B.Ed., M.Ed and other graduate and post-secondary courses besides helping aspirants preparing for the UPSC, Staff Selection Commission and other public exams. Is it not too much?

If he and his colleagues expect that "the books will prove a boon to those looking for graded self-study material to perfect

their (learners') command of comprehension and communication in English", they are simply mistaken. Their books fail to do what they intend them to do. And, this is a fair assessment. Because I trust the opinion of my readers who include a couple of post-secondary teachers and students.

I don't think I really need to respond to Dr Rizvi's angry outburst. But I feel sorry for him, because he could have possibly produced a more useful book, had he not tried to provide everything to everyone.

He is, of course, entitled to his views on my review just as I have no reasons to be malicious or presumptuous in, what is purely an academic exercise.

I have reviewed about 125 books, including fifty ELT titles, in the last ten years in prestigious

professional journals like ELT Journal (Oxford), EFL Gazette (London), The British Journal of Language Teaching (UK), World Language English (Oxford), Arels Journal (London), System (Oxford), Unesco ALSED-LSP Newsletter (Copenhagen), JALT Newsletter/The Language Teacher (Tokyo), Cross Currents (Japan), Meta (Montreal), RELC Journal (Singapore), Journal of Cross-Cultural Psychology (California), Indian Journal of Applied Linguistics (New Delhi), Focus on English (Madras) etc. and I don't think I have ever been called ignorant, biased or irresponsible. Even as an ESPist, Indian English poetry practitioner and critic, I have maintained a good standard.

R.K. Singh, Professor & Head,
Department of Humanities and
Social Sciences,
Indian School of Mines,
Dhanbad-826004

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आदेशानुसार
कुलसाधिक

RESEARCH IN PROGRESS

A list of research scholars registered for doctoral degrees in Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Sreekumar, B. A study on wavelength and amplitude distributions. Kerala. Sri Jacob Sundara Raja, Prof (Retd), Department of Statistics, University of Kerala, Kariavattom.

Chemistry

1. Anita. Great copolymerization of vinyl monomers onto gelatin by mutual irradiation method. HP. Dr Inderjeet Kaur, Department of Chemistry, Himachal Pradesh University, Shimla.

2. Barsainya, Deepak. Phytochemical studies of the flavonoidal constituents of some Composite plants. HS Gour, Dr R N Yadav, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

3. Bhardwaj, Anil. Synthesis and applications of some polymeric reagents in organic synthesis. HP. Dr C S Pande, Department of Chemistry, Himachal Pradesh University, Shimla.

4. Bhardwaj, Salinder Kumar. Studies on thermodynamic and transport properties of some tetra-alkyl and multi-charged electrolytes in water and aqueous organic solvents. HP. Dr M L Parmar, Department of Chemistry, Himachal Pradesh University, Shimla.

5. Darshan Kumar. A study of thermodynamic and transport phenomena of some mineral salts in aqueous solutions of urea. HP. Dr M L Parmar, Department of Chemistry, Himachal Pradesh University, Shimla.

6. Gian Chand. A study of the chemistry of some hydroxamic acid derivatives. HP. Dr B N Misra, Department of Chemistry, Himachal Pradesh University, Shimla.

7. Gupta, Sanjay. Conductance and ultrasonic velocity studies of electrolytes in N, N-dimethylformamide-dimethylsulphoxide solvent system at different temperatures. HP. Dr M S Chauhan, Department of Chemistry, Himachal Pradesh University, Shimla.

8. Joahi, Janeah. Membrane transport of some aqueous solutions under a magnetic field. HP. Dr R L Blokhra, Department of Chemistry, Himachal Pradesh University, Shimla.

9. Rekha Kumari. Thermodynamic and ultrasonic studies of cadmium sulphate solutions in mixed solvents. HP. Dr Shashi Kant Lomesh, Department of Chemistry, Himachal Pradesh University, Shimla.

10. Sharma, Kishore Chand. Conductance and viscosity studies of ion solvation in dimethyl sulphoxide-methanol solvent system. HP. Dr M S Chauhan, Department of Chemistry, Himachal Pradesh University, Shimla.

11. Sharma, Vandna. Analysis of the oils from unconventional oil bearing seeds from plants in Himachal Pradesh. HP. Dr C S Pande, Department of Chemistry, Himachal Pradesh University, Shimla.

12. Thakur, Naresh Kumar. Chemical studies on *Aspergillus fumigatus* Buch-Ham, *Agave verae-* Mill and *Aloe vera* Linn from Himachal Pradesh. HP. Dr S C Sharma, Department of Chemistry, Himachal Pradesh University, Shimla.

Engineering & Technology

1. Jose, S. Stresses around reinforced holes in orthotropic circular cylindrical shells. Kerala. Dr R Rameshkumar, Vikram Sarabhai Space Centre, Trivandrum.

2. Tarlochan Kaur. Self adaptive finite element analysis of electro-magnetic fields in power system equipments. Panjab. Prof R K Jain, Head, Department of Electrical Engineering, Panjab Engineering College, Chandigarh.

3. Vig, Renu. Simulation of mental models for diagnosis. Panjab. Dr Y C Chopra, Head, Department of Electronics and Electrical Communication Engineering, Panjab Engineering College, Chandigarh.

BIOLOGICAL SCIENCES

Biochemistry

1. Manojkumar, V. Biochemical studies on red palm oil. Kerala. Dr P A Kurup, Gowrisankar, TC/1525, Kowdiar, Thiruvananthapuram and Dr C Arunughan, Head, Department of Food Science and Biochemistry, Regional Research Laboratory, Thiruvananthapuram.

Zoology

1. Dubey, Ashwani Kumar. Responses of antioxidants, lipid protein interactions and lipid peroxidation in *Heteropneustes fossilis* to oxidative damage exposure. Vikram. Dr M S Parihar, Sr Lecturer, Department of Zoology, Vikram University, Ujjain.

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THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

PHYSICAL SCIENCES

MATHEMATICS

1. Agarwala, Sanjay. Optimization and software reliability growth modelling. Delhi.

2. Neeraja, G. Buoyancy driven flows through vertical channels : A study. Padmavati. Prof G Sarojamma, Head, Department of Applicable Mathematics, Sri Padmavati Mahila Visvavidyalayam, Tirupati.

3. Singh, Desh Vir. Onset of instability in some fluid dynamical systems. HP.

ASTRONOMY

1. Majumdar, Archana S. A study of higher dimensional theories in the early universe. Delhi.

PHYSICS

1. Bhattacharjee, Buddhadeb. Study of some physical properties of a solid state nuclear track detector. Gauhati. Dr T D Goswami, Prof, Department of Physics, Gauhati University, Guwahati.

2. Jagjeet Kaur. Thermal modelling of passive cooling concepts. Devi Ahilya. Dr M S Sodha, Vice Chancellor, Lucknow Vishwavidyalaya, Lucknow and Dr R L Sahni, Department of Energy, Devi Ahilya Vishwavidyalaya, Indore.

3. Karkare, Manasi Manoj. Finite element analysis of microwave transmission lines. Marathwada. Dr P B Patil, Reader, Department of Physics, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

4. Roy, Jitendra Prasad. Studies on some important physical properties of Orissa soils. Utkal.

5. Sikka, Pawan Kumar. A critical study on the management of science in India. D Sc. Meerut.

6. Subramanian, K R. High resolution radio spectroscopy of continuum radio bursts at decameter wavelengths from the sun. Bangalore. Dr M N Anandaram, Department of Physics, Bangalore University, Bangalore.

7. Sunil Kumar, P B. Some theoretical studies on the defect structures in liquid crystals. Bangalore. Dr G S Ranganath, Raman Research Institute, Bangalore.

8. Sunil Kumar, P B. Some theoretical studies on the defect structures in liquid crystals. Bangalore. Dr G S Ranganath, Raman Research Institute, Bangalore.

9. Usha, K. X-ray analysis of the crystal structures of some discotic compounds. Bangalore. Prof S Chandrasekhar, Liquid Crystals Laboratory, Raman Research Institute, Bangalore.

10. Vaidya, Indu. Studies on the mechanoluminescence of ZnS (Cu, Ce) and ZnS (Ag, Ce) phosphors. Durgavati.

11. Vengal Reddy, M. Bioaerodynamic studies on flight parameters, moment of inertia and power requirements of an insect, *Tessaratoma javanica* and a bird, *Merops orientalis*. Kakatiya. Dr T Venkat Reddy, Registrar, Telugu University, Hyderabad and Dr N Chari, Prof, Department of Zoology, Kakatiya University, Warangal.

CHEMISTRY

1. Ghode, Archana. Synthesis and properties of some thermotropic mesogens. Bangalore. Prof B K Sadasiv, Raman Research Institute, Bangalore.

2. Gupta, Mamta. Chemical studies of nitrogen heterocycles. Delhi.

3. Joshi, Ashok Kumar. Vibrational analysis of hydroxamic acids and metal hydroxamates. Devi Ahilya. Dr P V Khadikar, Department of Chemistry, Devi Ahilya Vishwavidyalaya, Indore.

4. Madan Kumar, S. Molecular orbital studies. Osmania. S. Muley, Damayanti Vasant. Studies on the transition and lanthanide metal complexes of some substituted oxaminoacetyl thiozoles. Marathwada. Dr Y H Deshpande, Reader, Department of Chemistry, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

5. Patil, Komalsingh Narsingh. Synthesis and reactions of 3-aryl chloro flavonoids. Amravati. Dr V S Jemode, Vidarbha Mahavidyalaya, Amravati.

7. Ramesh, N. Kinetics and morphological aspects of metal displacement reactions - Ag/Cu single crystal system. Bangalore. Dr B S Sheshadri, Prof and Chairman, Department of Chemistry, Central College, Bangalore.

8. Sathwara, Rajeshkumar Popatia. Studies in hydraulic conductivity of saline alkali soils. Gujarat. Dr R K Shah, Department of Chemistry, Gujarat University, Ahmedabad.

9. Satyanarayana Rao, Dhulipala. Phytochemical examination of *Withania somnifera* and *Physalis pubescens*. Andhra.

10. Shah, Hitesh Pravinchandra. Studies on drug potentials. Bhavnagar. Dr N K Undavia, Reader, Department of Chemistry, Bhavnagar University, Bhavnagar.

11. Shyam Sunder, K. Effect of frequency modulated current on electrocrystallization of copper. Bangalore. Dr B S Sheshadri, Prof, Department of Chemistry, Central College, Bangalore University, Bangalore.

12. Thapliyal, Prakash Chander. Synthetic studies in quinones, coumarins and phenols. Delhi.

EARTH SCIENCES

1. Krishna Murthy, J. Geological hydrogeological studies of parts of Karnataka between latitudes 13 degree N and 14 degree N using remote sensing techniques. Bangalore. Prof C Naganna (Retd), Department of Geology, Bangalore University, Bangalore and Dr G Srinivas, Department of Geology, Bangalore University, Bangalore.

2. Shahpasandi, Esmaeil. A combined study of Nuggihalli Alsahalli Schist Belts, Hassan Dist Karnataka with special reference to chromite mineralisation. Bangalore. Dr B S Shivakumar, Prof, Department of Geology, Bangalore University, Bangalore.

ENGINEERING

1. Chandwani, Manohar. Computational techniques in formal and natural languages. Devi Ahilya. Dr N S Chaudhari, Department of Computer Sciences, Devi Ahilya Vishwavidyalaya, Indore.

2. Chowde Gowda, M. Valorisation of rural wastes for quality life in villages. Bangalore. Dr M P Chowdaiah, Prof (Retd), No 61, 1st Block (East), Jayanagar, Bangalore.

3. Krishna, R N. Compatibility and strength characteristics of superplasticized high strength concrete. Anna. Dr A R Santhakumar, Dean, Department of Civil Engineering, Anna University, Madras.

TECHNOLOGY

1. Natchimuthu, N. Studies on polymer-leather composites for effective utilization of chrome shavings. Anna.

EDUCATION NEWS INDEX

A list of select articles and editorials on education from newspapers received in the AIU Library during September 1994

EDUCATIONAL PHILOSOPHY

Ambirajan, S. Diary of a roving academic. *The Hindu* 18.9.94.

EDUCATIONAL PSYCHOLOGY

Chadna, Sushma. Work takes a toll at home. *The Hindustan Times* 27.9.94.

Gadekar, Manisha. Parental ambition, class burden. *The Times of India* 25.9.94.

George, Jaya. Encourage children to read. *Deccan Herald* 25.9.94.

Naqvi, Kakkashan. Habit helped them cheat. *The Tribune* 10.9.94.

Narlikar, Amrita. When the party's over? *The Hindustan Times* 10.9.94.

Sethi, Sapna. Home work: A necessary evil or just an evil? *The Tribune* 18.9.94.

Shotton, John R. Towards a learning revolution. *The Economic Times* 4.9.94.

Singh, H Khogen. Crisis in the 'melting pot'? *The Hindustan Times* 14.9.94.

Venkata Subbaiah, M. Learning becoming an enterprise? *The Hindu* 6.9.94

EDUCATIONAL SOCIOLOGY

Ahmed, Firoz Bakht. What ails Muslim schools? *The Hindustan Times* 13.9.94.

Bhattacharya, Debasish. Madrasas born again in WB with govt's blessings. *The Telegraph* 26.9.94.

Jung, Zafar. Reform the madrasas. *The Times of India* 28.9.94.

Ravichandran, N. Creating socially desirable attitudes and behaviour patterns. *The Hindu* 13.9.94.

Sawant, Gaurav C. Refugee Kashmiris thirst for college. *Indian Express* 28.9.94.

Shukla, Rajiv. Lucknow: In 'reserve' gear. *The Hindustan Times* 13.9.94.

Yasmin Mahmood. The State, education were symbiotic. *The Pioneer* 17.9.94.

EDUCATIONAL POLICY & PLANNING

Anuradha, R. Towards education for all. *National Herald* 22.9.94.

Atma Ram. Developing the salient virtues. *The Hindu* 13.9.94.

DANGEROUS PRUDERY (Editorial). *Deccan Herald* 27.9.94.

NOT AT school (Editorial). *The Hindustan Times* 24.9.94.

PRUDISH ABOUT sex (Editorial). *The Pioneer* 23.9.94.

Regunathan, Sudhamani. Teaching without books. *The Hindustan Times* 10.9.94.

Sharma, Kavita A. Reducing the burden on young ones. *Deccan Chronicle* 8.9.94.

EDUCATIONAL ADMINISTRATION

Amrik Singh. Fresh initiative by JNU needed. *The Times of India* 24.9.94.

Atma Ram, K and Verma, D P. Old bull yoked to loaded cart. *The Tribune* 5.9.94.

Chakravorty, Shantanu. Choosing a peerless college. *Patriot* 11.9.94.

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Gautam, Lalit Mohan. Tale of a V-C and his varsity. *The Hindustan Times* 15.9.94.

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